

REMARKS

Claims 1-15 are pending in the application. The Examiner has rejected Claims 1-15.

Claims 13-15 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regard as the invention. Specifically, the term 'the quadrature signals' lacked antecedent basis. Claim 13 has been amended to eliminate this problem. Withdrawal of this objection is requested.

Claim 14 is objected to because of informalities because it depended from claim 14. Claim 14 has been amended to correctly depend from claim 13. Withdrawal of this objection is requested.

Claims 1-15 are rejected under 35 USC § 102(b) as being anticipated by Ino (US Patent No. 5,861,825).

Ino is directed to a method to modulate and demodulate data from a medium upon which is recorded digital signals. See column 1, lines 7-11. The method discloses using a state machine to shorten the path between states and thereby make the detected results more definite while providing denser storage of data. See the Summary of the Invention. As such, the directions referred to in Ino are the directions on the paths of the state machine diagrams, which are plotted on an X and Y axis as shown in Ino, Figures 5, 6, 10 and 11. Movement is also referred to as being movement along the X or Y axis of the state machine diagrams.

In contrast, the instant invention is directed to decoding quadrature signals to track physical movement of an object. See the instant specification at page 2, lines 25-30. In order to more clearly define the difference between movement in the state machine diagrams of the instant application and the movement of the object, Applicant has amended the specification in several places to differentiate between the two. As this is supported by the specification as noted above, this does not constitute new matter.

With regard to claims 1, 8 and 13, Ino does not show a method in which a last object direction is determined, as is required by newly amended claim 1. It is therefore submitted that claims 1, 8 and 13 are patentably distinguishable over the prior art and allowance of these claims is requested.

With regard to claim 2, Ino does not teach that the pair of samples is along an X or Y axis of the object movement, but instead refers to an X or Y axis of movement on the state machine. It is therefore submitted that claim 2 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 3, Ino does not teach object movement, in either the positive or negative direction and therefore cannot teach using different lookup tables based upon the object's movement. It is therefore submitted that claim 3 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 4, Ino does not teach a *user* input device. The text referred to mention a 'provided value' and a playback machine, but there is no user involved. These are not user inputs. It is therefore submitted that claim 4 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 5, Ino does not teach object movement and direction, Ino cannot teach motion and rotation direction. The directions in Ino refer to movement on the state machine maps, not movement of a physical object, such as a computer mouse. It is therefore submitted that claim 5 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 6, Ino does not teach skipping states. If one were to track the transitions between the states described in the text referred to, one can see that there are no states skipped between the starting point and the ending point. Skipping states occurs because the object moves faster than the quadrature signals are sampled. As there is no

object moving at variable speeds in Ino, there can be no skipped states due to movement of the object. It is therefore submitted that claim 6 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 7, the axis of movement of Ino is related to the axis of the movement in the state machine map. The axis of movement in claim 7 is related to the axis of *object* movement, as amended. It is therefore submitted that claim 7 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 9, Ino does not teach summing outputs of signals indicating an object movement and direction. It is therefore submitted that claim 9 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 10, the output signal of Ino is not an output signal that indicates movement of an object. It is therefore submitted that claim 10 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 11, Ino does not teach that the last object direction is a positive or negative direction, as Ino does not address physical direction, just directions in a state machine map. It is therefore submitted that claim 11 is patentably distinguishable over the prior art and allowance of this claim is requested.

It is submitted that claim 12 is patentably distinguishable over the prior art for the reasons as applied to claim 6 and allowance of this claim is requested.

With regard to claim 14, Ino does not teach a computer readable medium that has upon it code that when executed causes a machine to sample quadrature signals to determine movement of an object. It is therefore submitted that claim 14 is patentably distinguishable over the prior art and allowance of this claim is requested.

With regard to claim 14, Ino does not teach a computer readable medium that has upon it code that when executed causes a machine to sample quadrature signals to determine

movement of an object, much less that the outputs of the sampling process would be summed and then transmitted to a host computer to indicate the movement of an object. It is therefore submitted that claim 15 is patentably distinguishable over the prior art and allowance of this claim is requested.

The prior art made of record but not relied upon has been reviewed and is not considered pertinent to the Applicant's disclosure. No new matter has been added by this amendment. Allowance of all claims is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,
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